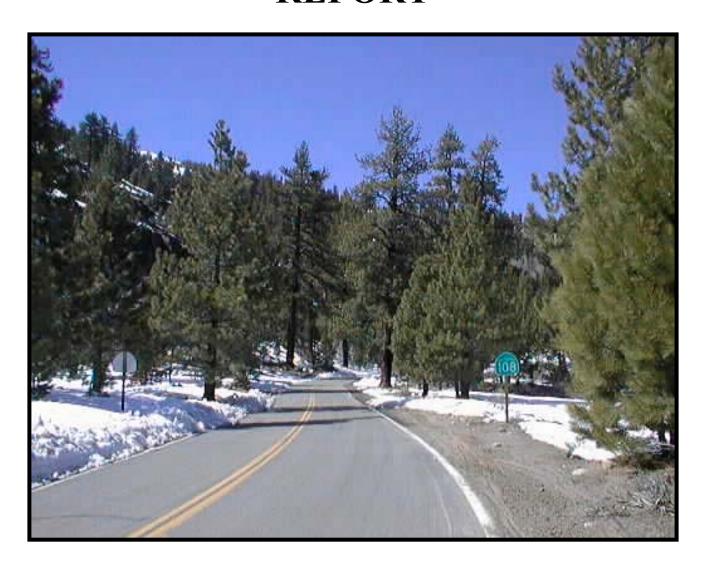
SR 108 TRANSPORTATION CONCEPT REPORT



CALTRANS DISTRICT 9

Office of System Planning December 2001

STATE ROUTE 108 TRANSPORTATION CONCEPT REPORT

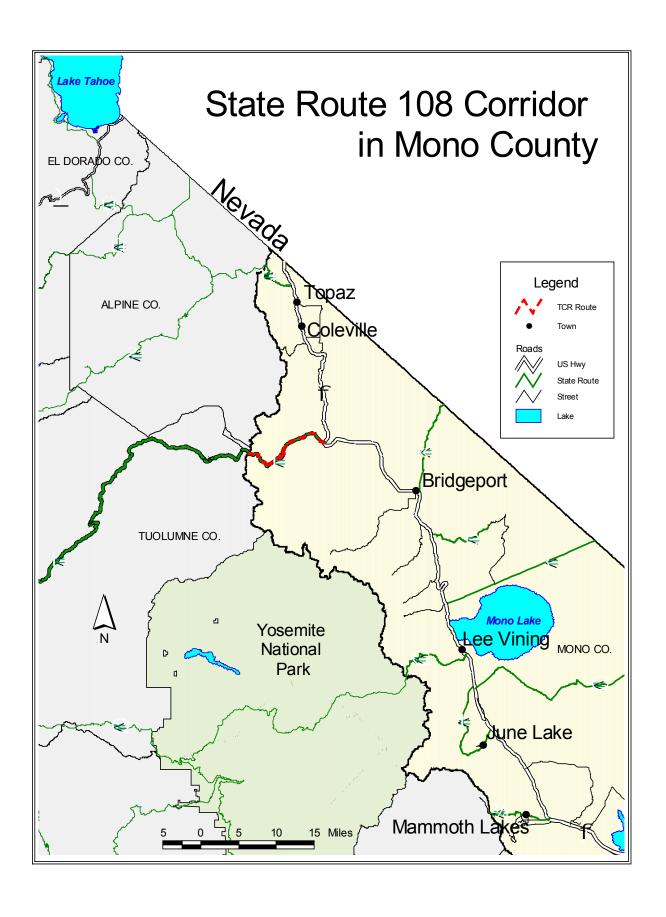
PREPARED
BY
CALTRANS
DISTRICT 9
SYSTEM PLANNING BRANCH

December 2001

APPROVAL RECOMMENDED:	
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THOMAS P. HALLENBECK District Director	DATE

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EXECUTIVE SUMMARY

INTRODUCTION

The Transportation Concept Report (TCR) is a long-range planning document that describes the current characteristics of the transportation corridor and establishes a twenty-year planning concept. The TCR defines the California Department of Transportation (Department) goals for the development of the transportation corridor in terms of Level of Service (LOS) and type of facilities, and broadly identifies the improvements needed to achieve those goals. The TCR also examines the corridor needs beyond the twenty-year planning period.

This Transportation Concept Report has been prepared by the District 9 System Planning Branch in consultation with the various functional units within the District, local agencies and regional agencies. All information in this report is subject to revision as condition changes and new information is obtained. Consequently, the nature and the size of identified improvements will be refined as they move through the project development stages. Final determinations are made at the time of project planning and environmental analysis.

FORMAT

The format for the TCR has changed from its previous fully narrative report form to a more concise database-oriented style. This new format was designed to streamline information and to better provide a useable, easy to update platform for computerized access.

CONCEPT RATIONALE

This Transportation Concept Report covers the portion of State Route 108 (SR 108) within the boundary of District 9, from the Tuolumne county line to US 395, a distance of 15.15 miles (24.38 kilometers). Andrew Fletcher first called the idea of a wagon road through Sonora Pass connecting Tuolumne County with Mining towns of Mono County to attention in 1862. In 1863, the Route was resurveyed and relocated from Sonora Pass down Deadman Creek and the middle fork of the Stanislaus River. The wagon road, which established the general location of the present highway, was completed in 1865. The State Route 108 became a State Highway in 1901.

State Route 108 is eligible for official designation as a California Scenic Highway due to the spectacular scenery along the route. Leavitt Falls, visible from the highway, contributes to the scenic appeal of the area. Recreation facilities such as day use areas, campgrounds and walking trails attract tourists and recreationists. Any future highway development that will have a potential negative aesthetic effect will require a visual impact analysis in order to preserve the outstanding scenery along the highway. SR 108 is a 2-lane Minor Arterial that provides access from US 395 to the western side of the Sierra Nevada Mountains. SR 108 begins at Sonora Junction in Mono County and

ends at Interstate 5 near Crows Landing in Stanislaus County. The elevation varies from approximately 6900 feet (2,103 m) at US 395 to over 9600 feet (2,926 m) at Sonora Pass. During the summer months, the road primarily serves recreational, the United States Marine Corps (USMC) Mountain Warfare Training Center (MWTC), and forestry traffic. US 395 Origin and Destination conducted during summer 2000 showed that 58.7% use SR 108 for recreation purposes. Due to severe winter weather conditions, SR 108 is usually closed from November to May. Only the section from US 395 to the USMC Mountain Warfare Training Center is kept open throughout the winter. There is interest from Mono County and residents in communities near Sonora Pass to keep a Mountain Pass open as long as possible in order to increase the economic base of local communities. SR 108 provides much needed recreational access to many of Mono County's most spectacular sites. Camping, fishing, horseback riding and hiking are just a few of the important tourism-related activities that help drive the county's economic engine. Also, when Sonora Pass is open, the Northern portion of the county, Bridgeport to the Nevada state line, is accessible to the populated areas of Central California and even the burgeoning community of Sonora, bringing much-needed economic benefits to the Northern portion of Mono County. Weather conditions and geometrics make it very difficult and costly to keep the highway open all year round. The costs versus benefits of this proposal should be addressed in a separate study and is not a part of the scope of this TCR. No alternative route exists for partial closure of SR 108. If a closure is required, the alternative is to utilize a different State Route, such as SR 89 or SR 120.

The primary needs for SR 108 are snow removal and continued adequate pavement maintenance. Spot operational and safety improvements such as drainage improvements, curve improvements, scenic turnouts and minor highway realignment will be considered as funding allows over the 20-year period. SR 108 is currently operating at Level of Service C. There are no capacity increasing projects being proposed for this State Route due to steep mountainous terrain and environmental considerations, therefore, the Concept LOS D is acceptable. Because SR 108 is environmentally sensitive, PM 0-15.15 (KP 0-24.38) will remain a 2-lane conventional facility. Due to significant impact to the highway and the character of the area if major improvements are made, the current design of the highway will remain the same. SR 108 has restrictions for buses over 40 feet (12.2) m) from postmile 0-11.4 (KP 0-18.4) due to steep grades, sharp curves and no turnaround opportunities. Buses over 40 feet (12.2 m) are allowed from Jct. 395 at PM 15.15 (KP 24.38) to the MWTC at PM 11.44 (KP 18.41), a distance of 3.71 miles (5.97) kilometers). Studies are currently being conducted to identify necessary improvements to accommodate 45-foot (13.71 m) buses. Bicyclists are allowed on all portions of SR 108 but use is generally light due to the Route's geometrics.

The USMC has proposed to relocate SR 108 in the vicinity of the MWTC. The primary objective of the proposed action is to meet airfield safety clearance requirements. It will also enhance visual quality along SR 108 by relocating a portion of the highway away from the lower base camp. The USMC has completed the Draft Project Study Report (PSR) for this project on July 19, 2001. Funding for this project is expected to be available in 2004 (as of December 2000). It is expected that this project will be constructed under encroachment permit within the 20-year timeframe.

ROUTE CONCEPT SUMMARY

County	Segment	Post	Post	Current	Concept	Ultimate	Current	10-Yr	20-Yr	Concept	Page #
		Miles	Kilometers	Facility	Facility	Facility	LOS	LOS	LOS	LOS	
				2 Lane	2 Lane	2 Lane					
Mono	1	0/7.9	0/12.71	Conventional	Conventional	Conventional	C	D	D	D	5
				2 Lane	2 Lane	2 Lane					
Mono	2	7.9/15.15	12.71/24.38	Conventional	Conventional	Conventional	C	C	C	C	7

Length in KM PKm Back	12.71 0.00	Length (mi): Back PM	7.90 0.00			
PKm Ahead	12.71	Ahead PM	7.90			
Present Facility	2 Lane Co	onventional				
Present LOS	C					
Concept Facility	2 Lane Conventional					
Concept LOS	D					
Ultimate Facility	2 Lane Co	onventional				



Segment Description

Segment 1, a two lane conventional facility begins at Tuolomne/Mono County Line and ends at Leavitt Meadows Trailhead. This segment of SR 108 serves mostly recreational and interregional traffic. The Leavitt Falls vista located at PM 6.0 (KP 9.65) attracts visitors to the area. This segment is characterized by narrow roadway, sharp curves and steep grades. Because of this, the standards for pavement width, grade and curve radius are low. The terrain is mountainous and 26% of the road have highway grades over 6%. The elevation ranges from 7155 ft. (2,181 m) to 9628 ft (2,935 m). The sight distance is severely limited on most of the upper portions of this segment. This segment carries approximately 480 AADT and operates at Level of Service C. The portion of the roadway known as Trailer House curve, PM 4.45-4.6 (KP 7.16-7.4) has a sharp vertical and horizontal curve. It is proposed to improve both the vertical and horizontal alignment at this location.

Route Concept Improvements

The route improvement strategies for this segment are as follows:

PM 0-15.1 (KP 0-24.38) at various locations - Upgrade and/or increase culvert capacity; PM 4.45-4.6 (KP 7.16-7.4)(Trailer House Curve) - Improve grade and alignment; and, PM 6.5 (KP 10.46) - Rock Fall Mitigation/Slope protection.

Functi	iona	ıl Classificati	Minor Arterial	
Route Des	igna	ations:		0=Non NTN, 1=NTN STAA
National Hwy System	N	Nat'l Truck Network	0	Trucks, 2=Terminal Access Rte.
Freeway/ Express	Υ	Scenic Highway	2	0=Non Scenic, 1=Officially Designated, 2=Eligible
STRAHNET	N	Life Line	0	0=Non Life Line, 1=Life Line
Regionally Significant	N	IRRS	1	0=Non IRRS, 1=IRRS, 2=IRRS Unconst, 3=Non IRRS, unconst
	Route Des National Hwy System Freeway/ Express STRAHNET Regionally	Route Designa National N Hwy System Freeway/ Express STRAHNET N Regionally N	Route Designations: National Hwy System Nat'l Truck Network Freeway/ Scenic Highway STRAHNET N Life Line Regionally N IRRS	National Hwy System N Nat'l Truck Network 0 Freeway/ Express Y Scenic Highway 2 STRAHNET N Life Line 0 Regionally N IRRS 1

Programmed Projects

2000 SHOPP: MNO 108-PM 3.0-3.1(KP 4.83-4.99) - Sardine Creek Bridge Replacement. Construction is expected to begin in 2001.
2001 MINOR A: MNO 108-PM 0-15.1(KP 0-24.38) - Upgrade and/or increase culvert capacity. Construction is expected to begin in 2001.
2003 MINOR A: MNO 108-PM 4.45-4.6 (KP 7.16-7.4) - Vertical and horizontal curve alignment improvement. Construction is expected to begin in 2004.

County: MONO Route 108 Segment: 1 5

RTPA/COG/MPO

Mono County LTC, Scott Burns, Executive Director PO Box 347 Mammoth Lakes, CA 93546 (760) 924-5450

General Plan General Plan Standards

Mono County General Plan, 1993 update LOS D

Air Quality Comments

This segment is unclassified/attainment for all air quality Federal standards. The following information is a brief overview only. For specific environmental information, contact the Caltrans District 9 Environmental Offices.

Air Basin

Great Basin Valleys

Air Quality District

Great Basin Unified Air Pollution Control District. 157 Short St. Bishop, CA 93514 (760) 872-8211

Water Quality Comments

District 9 will coordinate and consult with local government agencies concerning Storm Water issues.

Land Use

Land use for this segment is open space recreational and ranching. The roadway along this segment provides access to hiking, camping and fishing. Land use owners are U.S. Forest Service and a few private parcels.

Transit Service/ Modal Options

Bicycle travel is allowed. Fixed bus service not available. This Route has restrictions for buses over 40 ft due to steep grades and sharp curves. Sharp horizontal and vertical curves are located at PM 0.32 (KP 0.51), 0.55 (KP 0.88), 0.74 (KP 1.19), 2.23 (KP3.59), 2.29 (KP 3.68), 4.31 (KP 6.93), 4.5 (KP 7.24) and 6.65 (KP 10.7). Studies are currently being conducted to identify necessary improvements to accommodate 45-foot (13.71 m) buses.

Highway Log Right of Way Information

Average Median Width (ft) 0 Avg Median Width (m) 0

Average Shoulder Width (ft) 2 Avg Shoulder Width (m) 0.6

Average Lane Width (ft) 12 Avg Lane Width (m) 3.7

Right of Way Comments

District 9 was issued a Special Use Permit (SUP) by the USFS for the entire route. The SUP expires 12/31/04. Right of Way is by prescriptive use only. There is no agreement with any other agencies for this segment.

Traffic Forecasts		Peak Hourly Volumes		V/C Ratio	LOS	
2000 AADT	480	2000 PKH	155	2000 V/C	0.13	С
2010 AADT	528	2010 PKH	171	2010 V/C	0.14	D
2020 AADT	576	2020 PKH	186	2020 V/C	0.16	D

Traffic Analysis Comments

67% of the accidents in this segment are eastbound. Grades and curves maybe the factors. Possible improvements include operational and geometric improvements.

Calculation Factors

F+I Accident Rate	1.02	% Traffic Growth (0-10 yrs)	1	% of Tru	icks	1
F+I Statewide Avg Rate	1.28	% Traffic Growth	1	% of RV	's	4
Total Accident Rate	1.53	(10-20 yrs)		% of Buses		2
Total Statewide Avg Rate	2.54	Directional Split	50/50	Terrain	Mount	ainous

Environmental Concerns

The scenic mountainous area is the main environmental concern for this segment. Other areas of concern are wet lands, endangered species and archaelogical sites.

Bibliography

Mono County Regional Transportation Plan, 1996 (rev. 1999) Mono County General Plan, 1993

Highway Capacity Software, 1995

County: MONO Route 108 Segment: 1 6

Length in KM PKm Back	11.67 12.71	Length (mi): Back PM	7.25 7.90	
PKm Ahead	24.38	Ahead PM	15.15	
Present Facility	2 Lane Co	onventional		
Present LOS	C			
Concept Facility	2 Lane Co	onventional		
Concept LOS	С			
Ultimate Facility	2 Lane Co	nventional		



Segment Description

Segment 2 begins at Leavitt Meadows Trailhead and ends at the junction with US 395. This segment of SR 108 provides a vital link for transporting of military personnel, equipment and supplies to and from the U.S Marine Corps Mountain Warfare Training Center. This segment also serves recreational traffic. Campgrounds are located at PM 7.9 (KP12.71) (Leavitt Meadows Campground) and PM 13.6 (KP21.88) (Sonora Bridge Campground). This segment carries 1233 AADT and operates at Level of Service C. The terrain throughout this segment is rolling with elevation ranging from 6693 ft. (2,040 m) to 7220 ft (2,201 m). The roadway's geometry is generally dictated by the rugged terrain the highway traverses.

Between PM 11.44 (KP 18.41) and 15.15 (KP 24.38), the US Marine Corps has proposed to relocate State Route 108. The primary objective of the proposed action is to meet airfield safety clearance requirements.

Route Concept Improvements

The route improvement strategies for this segment are as follows:

PM 0-15.1 (KP 0-24.38) at various locations - Upgrade and/or increase culvert capacity; and, PM 11.44-15.15 (KP 18.41-24.38) - Possible relocation by the USMC under permit.

Functi	iona	al Classificati	on:	Minor Arterial	Programmed Projects
Route Designations:		0=Non NTN, 1=NTN STAA	2001 MINOR A: MNO 108-PM 0-15.1(KP 0-24.38) - Upgrade and/or increase culvert capacity.		
National Hwy System	N	Nat'l Truck Network	0	Trucks, 2=Terminal Access Rte.	Construction is expected to begin in 2001.
Freeway/ Express	Υ	Scenic Highway	2	0=Non Scenic, 1=Officially Designated, 2=Eligible	
STRAHNET	N	Life Line	0	0=Non Life Line, 1=Life Line	
Regionally Significant	N	IRRS	1	0=Non IRRS, 1=IRRS, 2=IRRS Unconst, 3=Non IRRS, unconst.	

County: MONO Route 108 Segment: 2 7

RTPA/COG/MPO

Mono County LTC, Scott Burns, Executive Director P.O. Box 347 Mammoth Lakes, CA 93546 (760)924-5450

General Plan Standards **General Plan**

Mono County General Plan. 1993 update

LOS D

Air Quality Comments

This segment is unclassified/attainment for all air quality Federal standards. The following information is a brief overview only. For specific environmental information, contact the Caltrans District 9 Environmental Offices.

Air Basin

Great Basin Valleys

Air Quality District

Great Basin Unified Air Pollution Control District.157 Short St. Bishop, CA 93514 (760) 872-8211.

Water Quality Comments

District 9 will coordinate and consult with local government agencies concerning Storm Water issues.

Land Use

Land use for this segment are U.S. Marine Corps Base, open space recreational and ranching. From PM 11.4 (KP 18.34) to PM 15.15 (KP 24.38), the route provides access to US Marine Corps Mountain Warfare Training Center. Land ownership in this segment consists mainly of USMC, US Forest Service land and some large undeveloped private parcels.

Transit Service/ Modal Options

Bicycle travel is allowed. Fixed bus service not available. This route has restrictions for buses over 40 feet (12.2 m) due to steep grades and sharp curves.

Highway Log Right of Way Information

Avg Median Width (m) 0 Average Median Width (ft) 0 Average Shoulder Width (ft) 2 Avg Shoulder Width (m) 0.6

Average Lane Width (ft) 12 Avg Lane Width (m) 3.7

Right of Way Comments

District 9 was issued a Special Use Permit (SUP) by the USFS for the entire route. The SUP expires 12/31/04. Right of Way is by prescriptive use only. There is no agreement with any other agencies for this segment.

Traffic Forecasts		Peak Hourly Volumes		V/C Ratio	LOS	
2000 AADT	1233	2000 PKH	303	2000 V/C	0.16	С
2010 AADT	1356	2010 PKH	333	2010 V/C	0.17	С
2020 AADT	1480	2020 PKH	364	2020 V/C	0.19	С

Traffic Analysis Comments

Most accidents occur between PM 12 (KP 19.31) and PM 14 (KP 22.53). 75% are westbound. 50% of the accidents are due to snow and ice. Possible improvements include shoulder widening and geometric improvements.

	Calculation Fac	ctors		·	Environmental Concerns
F+I Accident Rate	0.42 % Traffic Growth (0-10 yrs)	1	% of Trucks	1	Identified areas of concern are
F+I Statewide Avg Rate	0.68 % Traffic Growth	1	% of RV's	4	the scenic viewshed, wetlands, stream crossings, endangered
Total Accident Rate	0.74 (10-20 yrs)		% of Buses	2	species and archaelogical sites.
Total Statewide Avg Rate	1.35 Directional Split	51/49	Terrain Rolling	g	

Bibliography

Mono County Regional Transportation Plan, 1996 (rev. 1999)

Mono County General Plan, 1993 Highway Capacity Software, 1995

Segment: 2 County: MONO 108 Route

GLOSSARY

Concept Facility Highway facility type and characteristics considered viable with

or without improvement within the 20-year planning period given financial, environmental, planning and engineering factors.

Concept LOS Highest and best Level of Service that can be achieved in the 20-

year planning period based on the concept facility.

Directional split The percentage of traffic in the peak direction during the peak

hour.

Functional Classification Guided by Federal legislation, refers to a process by which

streets and highways are grouped into classes or systems according to the character of the service that is provided (i.e. Principal Arterial, Minor Arterial Roads, Collector Roads and

Local Roads).

Interregional Road System Statewide network of legislatively identified interregional routes,

outside urbanized areas, that provides access to, and links between, the state's economic centers, major recreational areas,

urban and rural regions.

Level of Service (LOS) A qualitative rating of the effectiveness of a transportation

system in serving travel. Letters A (best) through F (worst).

National Highway System Federal-designated system of major highways in each state,

including all numbered interstate highways.

Present Facility Highway type and general characteristics at the time of this

study.

Present LOS Existing Level of Service.

Programmed Projects Capacity-enhancing, safety and/or operational improvement

projects programmed through the STIP or SHOPP.

Route Designations Identifies whether or not the subject segment of a route is

designated as being part of the National Highway System

(NHS); Interregional Highway System (IRRS);

Freeway/Expressway (F & E) System; Scenic Highway;

National Truck Network (NTN); Terminal Access Route for the

National Truck Network; Strategic Highway Network (STRAHNET); and, Highways of Regional Significance.

Ultimate Facility Considers transportation needs 30-50 year Planning horizon to

establish future right-of-way needs to accommodate growth.

ACRONYMS

AADT Average Annual Daily Traffic

ADT Average Daily Traffic

BLM Bureau of Land Management

California Department of Transportation

IRRS Interregional Road System

KM Kilometer
KP Post Kilometer
LOS Level of Service

MNO Mono

MWTC Mountain Warfare Training Center

NHS National Highway System NTN National Truck Network

PM Post Mile

RV Recreational Vehicle

SHOPP State Highway Operation and Protection Program

STAA Surface Transportation Assistance Act
STIP State Transportation Improvement Program

STRAHNET Strategic Highway Network
TCR Transportation Concept Report

USFS US Forest Service
USMC US Marine Corps
V/C Volume to Capacity

REFERENCES

2000 US 395 Origination and Destination Study

1996 Mono County Regional Transportation Plan (revised 1999)

1993 Caltrans Route Segment Report

1993 Mono County General Plan

1985 Caltrans Highway Capacity Manual/Highway Capacity Software v. 2.1

1985 SR 108 Route Development Plan

District 9 Post Mile Log (revised 8/00)

TASAS Table B Accident Data – 3 year information from 05/02/97-05/01/00

